

REMARKS

The Examiner's comments have been carefully reviewed.

With regard to para. 1 of the Office Action, the Specification has been amended in accordance with the Examiner's suggestion.

With regard to para. 2 of the Office Action, submitted herewith is a substitute specification under 37 CFR 1.125 (a).

With regard to para. 3 of the Office Action, Claim 4 has been amended in accordance with the Examiner's suggestion.

With regard to para. 4 of the Office Action, the Examiner is correct that the invention teaches displaying at least two angiographic images of the arterial tree from different perspectives. Claim 1 has been canceled and replaced by a new claim 24 which is formulated correctly in a manner supported by the specification.

With regard to para. 5 of the Office Action, new independent claims 24, 30 and 32 replace original independent claims 1, 9 and 16. The new independent claims are based on the original disclosure relating to the flow cart in Fig. 3 on page 10, line 9 to page 11, line 11. No new matter is added. It is respectfully submitted that the new independent claims are

patentable over Chen et al. US 6,047,080 ("Chen") for the following reasons.

Chen is directed to a method for generating a three-dimensional reconstruction of an arterial tree. As distinct from Chen, the claims as now formulated are directed to generating a three-dimensional reconstruction of an artery of interest in an arterial tree. The claims no longer require that there be first generated a three-dimensional reconstruction of an arterial tree. In this respect the claims no longer read on Chen.

The invention is directed to a system and method that allows the user to obtain necessary information (for example, severity and length of a stenotic artery) directly by reconstructing only the artery, without reconstructing the entire tree. This is a significant distinction over Chen.

Moreover, performing a 3D reconstruction of an artery is not a specific case of performing a 3D reconstruction of an arterial tree. Chen's whole process of 3D reconstruction and every other aspect of their approach is based on obtaining the arterial tree and features within the tree. Thus, the Examiner's attention is directed to col. 20, line 51 - claim 1 reciting "A method for three-dimensional reconstruction of a target object from two-dimensional images, said target object having a

plurality of branch-like vessels...". Chen's entire mathematics of 3D reconstruction is based on the object having branch-like vessels. The present invention as claimed does not require this.

The method and system according to the present invention as now claimed offer not only a simpler implementation than Chen but may also be more accurate in specific cases. Considering, for example, the Right Coronary Artery (RCA), Chen's invention is, many times, not applicable for that artery since in many cases it will appear as a long vessel with few or no branches at all. The claims of the present application, on the other hand, describe an approach which does not suffer from this drawback.

It is also known in the art to image the coronary tree from 270 degrees and to preset a sequence of images that gives a feeling of 3D. This is done by simply outputting the images one after the other, without mathematical manipulation. Such an approach can be used to determine several projections of an artery of interest, whereafter the present invention can be used to directly reconstruct the artery. Thus, here also, no reconstruction of the arterial tree is required.

Wahle et al. (Wahle) refers to "3-D reconstruction system operating on biplane angiograms". Wahle's whole analysis is predicated on the use of biplane angiograms. The claims of the present invention are not limited to a biplane input.

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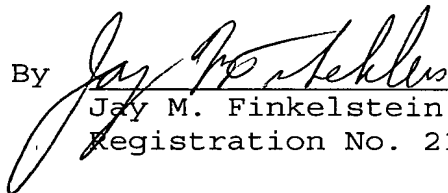
In conclusion, the amended independent claims do not require the reconstruction of a complete arterial tree but only of one or more selected arteries. As such, it is respectfully submitted that they are allowable over Chen and Wahle both singly and in combination.

It is likewise urged that the subsidiary claims are allowable as being dependent on base claims that are allowable.

If the above amendment should not now place the application in condition for allowance, the Examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

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